



USDA Forest Service

May 22, 2014

Grand Mesa, Uncompahgre, and Gunnison National Forests

Spruce Beetle and Sudden Aspen Decline Management Response

Basic Science and Analysis Assumptions: *Transportation*

Guiding Issues and Goals

- Focus on public health and safety
- Maximize economic value

Solutions to Issues

- Minimize road construction through use of existing infrastructure
- Utilize best practices in road design to minimize environmental impacts
- No increases in open-road density

Overarching Assumptions

The Forest transportation system, as documented and inventoried by the Forest transportation atlas, is the primary data used to summarize this effects analysis. All distance figures are approximate values based on the Forest transportation atlas (including spatial GIS data and tabular INFRA data) and are limited to the accuracy of those sources which includes measurements from GIS, GPS, field instruments and aerial photography. Mileages may change slightly with additional field verification and project implementation.

All road work and infrastructure improvements would be conducted in accordance with the Project Design Features.

The spatial boundary and subject for analysis includes the entire Forest transportation system.

Effects are assessed based on a 15-year time frame, assuming all project actions associated with the transportation network would be completed by that time.

Transportation actions by alternative were developed using the following assumptions:

- Over the life of this project, the Forest is capable of implementing 60,000 acres of commercial mechanical harvests, including roadside danger tree mitigation and public health and safety treatments. This acreage was assumed for all action alternatives.

- For Alternatives 2 and 4, likely mechanical vegetation treatments would be within 1 mile of existing operational maintenance level 3-5 NFS roads.
- For Alternative 3, likely mechanical vegetation treatments would be within ¼ mile of existing operational maintenance level 3-5 NFS roads.
- Mileages for designed road construction and temporary road construction are based on Forest available data for timber sales occurring over the past 5 years. Adjustments were then made as follows:
 - One mile of temporary road would be constructed for every 2000 acres of public health and safety treatments.
 - New access roads for salvage and resiliency treatments beyond ¼ mile of existing operational maintenance level 3-5 NFS roads would match the Forest construction average using timber sale data from the past 5 years.
 - New access roads for salvage and resiliency treatments beyond 300 feet but less than ¼ mile of existing operational maintenance level 3-5 NFS roads would be ¼ of the Forest construction average using timber sale data from the past 5 years.
- Road reconstruction would occur at the rate of 1 mile for every 230 acres (based on the Forest 5-year data).
- Under Alternatives 2 and 4, 50% of all operational maintenance level 3-5 roads intersecting likely treatment areas would be maintained.
- Under Alternatives 2 and 4, 19.5% of operational maintenance level 1-2 roads would be maintained or reconstructed.
- Under Alternative 3, 75% of all operational maintenance level 3-5 roads intersecting likely treatment areas would be maintained.
- Under Alternative 3, 20% of operational maintenance level 1-2 intersecting likely treatment areas roads would be maintained or reconstructed. This was adjusted assuming treatments under this Alternative would prioritize higher standard roads (ML 3-5).
- Alternatives 2 and 4 use the same mileage estimates.

Methods – Analysis Approach

- For tree removal buffer along open NFS roads for public health and safety, assume 1 mile temporary road construction for every 2,000 acres of treatment
- For treatments within ¼ mile of exiting ML3-4 roads, assume ratio of ¼ the average construction from past treatments
- For salvage/resiliency treatments beyond 1/4 mile of existing ML3-5 roads, assume the average construction ratio from past treatments

- Applied road construction and reconstruction based on past timber project averages over the past 5 years, shown below by zone:

GMUG 5-Year Average Data

	1 mile temporary (Acres)	1 mile Reconstruction (Acres)	1 mile construction designed (Acres)
NZ	139	244	582
EZ	218	225	1,165
WZ	162	NA	NA
AVG.	173 ac	156 ac	582 ac

Expected Outcomes /Results

- Minimize road construction through use of existing infrastructure
- Utilize design features, best management practices in road design, pre-implementation checklists, and project implementation review to minimize environmental impacts
- No increases in open-road density

Through use of the Project Design Criteria, and proper resource review prior to implementation, the action alternatives are consistent and compliant with applicable transportation direction.